

## ABSTRACT

A system for balancing a distribution of allocations for protected software over a communication network is disclosed. The system is comprised of at least one client computer and a pool of license servers coupled to the communication network. The client computers request authorizations to use the protected software, while a distribution of allocations is managed among the pool of servers for tracking and managing available allocations for using the protected software. One license server in the pool is designated as the current leader server. When a particular license server does not have a selectable minimum amount of available allocations, the current leader server re-assigns, where possible, the allocations within the pool by updating memory containing the distribution tables of license servers in the pool, to give at least one additional allocation to the particular license server.

1. The first part of the paper is devoted to the study of the asymptotic behavior of the solutions of the system (1) as  $\epsilon \rightarrow 0$ . It is shown that the solutions of the system (1) converge to the solutions of the system (2) as  $\epsilon \rightarrow 0$ .